

Attorney Docket No. 9180-5

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: J. Daniel Mis et al;
Serial No.: 09/966,316
Filed: September 27, 2001

Group Art Unit: 2811
Examiner: Nitin Parekh
Confirmation No.: 5045

For: **METHODS OF FORMING METALLURGY STRUCTURES FOR WIRE AND
SOLDER BONDING AND RELATING STRUCTURES**

Date: May 14, 2003

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Anders
5/27/03

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Sir:

In response to the Office Action dated February 14, 2002, the Applicants respectfully request entry of this amendment, and substantive examination on the merits. In particular, the Applicants have amended the specification to overcome all objections thereto. Attached hereto is a marked up version of the changes made by the current amendment. The marked up version of the changes is captioned "Version With Markings To Show Changes Made".

In The Specification:

Please amend the paragraph at page 9, lines 7-15, to recite:

Examples of alternate operations of providing wire and solder bonds to a structure according to Figure 1C are illustrated in Figures 3A-B. As shown in Figure 3A, the first integrated circuit substrate 21" may include input/output pads 23a"-d" and protective insulating layer 25" as discussed above. As further discussed above, metallurgy structures 34a"-d" can provide solder or wire bonds, and may, for example, include respective under bump metallurgy layers 27a"-d", barrier layers 31a"-d", and passivation layers 33a"-d". These structures can be provided, for example, as discussed above with regard to Figures 1A-C.

Please amend the paragraph at page 9, line 33 to page 10, line 3 to recite:

As further shown in Figure 3B, wires 51a" and 51d" can be bonded to metallurgy structures 34a" and 34d" using techniques known to those having skill in the art. While the wires are discussed as being bonded after solder bonding the second substrate to the first substrate, the wires could be bonded prior to bonding the first and second substrates.

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Mail Stop Amendment Non Fee

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Transmitted herewith is an AMENDMENT in the above-identified patent application.

☐ Applicant claims small entity status. See 37 CFR §1.27.☒ No additional fee is required.☐ Other:

The fee has been calculated as shown below:

| (COL. 1) | | (COL. 2) | (COL. 3) | SMALL ENTITY | | OTHER THAN A SMALL ENTITY | |
|--|----------------------------------|------------------------------------|---------------|----------------|------------|---------------------------|------------|
| | Claims Remaining After Amendment | Highest Number Previously Paid For | Present Extra | RATE | ADDIT. FEE | OR RATE | ADDIT. FEE |
| Total | * 43- | ** 68 | = 0 | x 09= | \$ | x 18= | \$ |
| Indep | * 4- | *** 6 | = 0 | x 42= | \$ | x 84= | \$ |
| <input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEP. CLAIM | | | | +140= | \$ | +280= | \$ |
| | | | | Total Add. Fee | \$ | OR Total | \$ |

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.

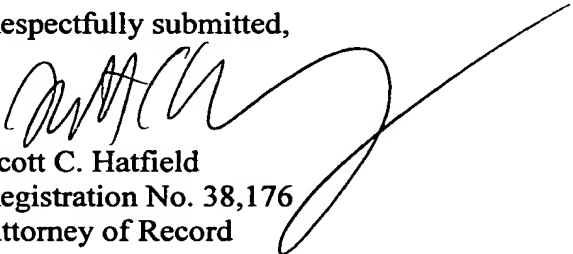
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space. The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior Amendment or the number of claims originally filed.

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- ☐ Please charge my Deposit Account No. 50-0220 in the amount of \$.
- ☐ A check in the amount \$_____ to cover the additional fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. 50-0220.
- ☒ Any additional filing fees required under 37 C.F.R. § 1.16 for the presentation of extra claims.
- ☒ Any patent application processing fees under 37 C.F.R. § 1.17.

Respectfully submitted,


Scott C. Hatfield
Registration No. 38,176
Attorney of Record

Customer Number:



20792

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